



INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference BO 44373	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/EP 02/09822	International filing date (day/month/year) 30.08.2002	Priority date (day/month/year) 30.08.2002
International Patent Classification (IPC) or both national classification and IPC H04M3/493		
Applicant TELEFONAKTIEBOLAGET L M ERICSSON et al		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 8 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 6 sheets.</p>		
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the opinion</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>		
Date of submission of the demand 13.02.2004	Date of completion of this report 18.01.2005	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Gavin Alarcon, O Telephone No. +49 89 2399-7012 	

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/EP 02/09822**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-20 as originally filed

Claims, Numbers

1-16 received on 22.11.2004 with letter of 22.11.2004

Drawings, Sheets

1/6-6/6 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
 - ☐ the language of publication of the international application (under Rule 48.3(b)).
 - ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:
- ☐ contained in the international application in written form.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority in written form.
 - ☐ furnished subsequently to this Authority in computer readable form.
 - ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
 - ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.
4. The amendments have resulted in the cancellation of:
- ☐ the description, pages:
 - ☐ the claims, Nos.:
 - ☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-16
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-16
Industrial applicability (IA)	Yes: Claims	1-16
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

0. Reference is made to the following documents

D1: WO 02/43362 A; ELISA COMM OYJ (FI) 30 May 2002 (2002-05-30)

D2: WO 01/73750 A (DIALSURF INC) 4 October 2001 (2001-10-04)

1. INDEPENDENT CLAIM 1

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 does not involve an inventive step in the sense of Article 33(3) PCT.

1.1 The document D1 is regarded as being the closest prior art to the subject-matter of claim 1 and discloses (the references in parentheses applying to this document):

an intelligent peripheral ("IP", "intelligent peripheral" plus "VRP") for speech recognition (page 10, lines 1-2, "a VRP -voice recognition program- is connected to the IP for speech recognition", page 14, lines 7-10, "speech recognition application").

The intelligent peripheral ("IP" plus "VRP") is provided with a memory ("service database SDB", "external service database DB") connected to it (Fig. 1).

The memory ("SDB") is adapted to store a list of addresses ("telephone numbers") of at least one of a set of persons, personal functions, specific terminals and services. The addresses include at least one of the following sets: fixed telephone addresses, mobile telephone addresses, e-mail addresses and facsimile addresses (page 11, lines 18-20, "the name and person data", page 13, lines 19-22, "the updated data include information such as the names of the company's personnel and their corresponding telephone numbers -landline, GSM, etc-, possibly their departments and titles", page 14, lines 10-14, "this name correspond to a number of the [...] external database, on the basis of which the call is routed through to the desired destination").

The intelligent peripheral ("IP" plus "VRP") of D1 is arranged to:

- (stage 5 in D1) communicate (Fig. 1, "5", page 11, lines 1-2, "the SCP creates a logical INAP connection -stage 5- with the IP" and page 11, lines 10-13, "signalling connection -stage 5-") with a network apparatus ("SCP") arranged to control a

switch ("SSP", see page 9, lines 27-30, "an SSP -service switching point- which in turn is controlled by an SCP -service control point-") in a telecommunication network ("LE" and page 10, lines 9-10, "a telecommunications network supporting voice transfer"); and

- (stage 4 in D1) communicate (Fig. 1, "4", "the call is routed to the IP -stage 4-") with said switch ("SSP").

Additionally, the intelligent peripheral of D1 ("IP" plus "VRP") performs the following operations:

- a) (stages 1-4 in D1) to receive a call from said switch ("SSP") (page 10, lines 10-13, "the call is routed through the SSP" and page 14, lines 7-10, "the speech recognition application receives the call"), to establish a communication channel ("connection", Fig. 1, "4") with said switch ("SSP") and to receive a demand to be able to receive a speech instruction (page 10, line 30 to page 11, line 5, "the SCP commands the SSP to route the call to the automatic operator. If the call requires the automatic operator service, the call is routed to the IP [...]. The [...] IP [...] goes on to receive the data coming from the connection"); and
- b) (stage 6 in D1) to receive from a first telecommunication apparatus ("terminal device TD", "the caller") said speech instruction ("speech data coming from the connection", page 14, lines 7-10, "the speech recognition application analyses the caller's speech"), wherein the speech instruction is associated with a number associated with either a desired person, personal function, second telecommunication apparatus or service desired to be called or noticed by said first telecommunication apparatus (page 14, lines 10-14, "a person's name. This name correspond to a number of the [...] external database, on the basis of which the call is routed through to the desired destination"); and
- c) (stages 7a-7b in D1) to translate said speech instruction into an address ("telecommunications telephone number or some other similar address of the destination") associated with either a desired person, personal function, second telecommunication apparatus or service and send said address to said network apparatus ("SCP") (page 14, lines 10-14, "and retrieves from the company-specific section of the service's database the information closest to it- in this case a person's name", page 15, lines 24-30, "the program in the IP device can, besides determining the destination name from the received speech data, also retrieve the telecommunications network telephone number -or some other similar address of

.. the destination- corresponding to the name and notify the SCP of this for the connection of the call") ; and

d) to release said communication channel with said switch ("SSP", see page 11, lines 15-16, "the SCP commands the SSP to disconnect the connection to the external IP").

1.2 The subject-matter of claim 1 differs from the device of D1 in that:

i) the intelligent peripheral is provided with a processor and a memory to store instructions; and

ii) the addresses are specifically VPN-addresses; and

iii) the address is sent from the intelligent peripheral to the network apparatus via the switch and as a standard IN request; and

iv) an additional spoken instruction is recognized to determine in which set the VPN-address is stored; and

v) not only the address, but also the identity and current location of the first telecommunication apparatus are sent by the intelligent peripheral.

1.3 With respect to difference i), D1 discloses that the intelligent peripheral comprises a program (page 15, lines 24-30) and a voice recognition program (page 10, lines 1-2, "VRP"). Although there is no specific mention of a processor in D1, it is obvious to those skilled in the art that a program is run on a processor and that the corresponding program instructions are stored in a memory. The fact of having a common memory to store instructions and addresses instead of two separate memories cannot be regarded as involving any inventive skill.

1.4 Concerning difference ii), D1 discloses (page 15, lines 24-30) that "the IP device can retrieve the telecommunications network telephone number -or some other similar address of the destination- corresponding to the name". The fact that the addresses are specifically VPN addresses is just an option amongst a well-known range of possibilities and therefore cannot be considered as inventive.

1.5 With respect to difference iii), D1 discloses (page 15, lines 24-30) that the address is sent from the intelligent peripheral ("IP" plus "VRP") to the network apparatus ("SCP"). Additionally, D1 states (page 11, lines 1-13) that the intelligent peripheral and the network apparatus communicate through a signalling INAP logical connection and that (page 10, lines 9-18) the INAP protocol is used to make a service request from the switch ("SSP") to the network apparatus ("SCP").

Consequently, those skilled in the art of intelligent networks would know that the address is sent via the switch ("SSP") as a service request, which makes difference iii) not inventive.

- 1.6 Regarding difference iv), the fact of requesting the caller for additional spoken information to perform a more specific search is a known feature in interactive voice recognition (IVR) systems like the one in D1.
- 1.7 In view of difference v), the problem to be solved by the device of claim 1 can be regarded as how to provide services which are based on the location of the caller. This problem, which is well-known in the field of intelligent networking, is addressed in document D2 (page 64, line 29 to page 65, line 12), which discloses a system which is similar to the one in D1 and which uses the location and the identity of the caller to provide location-based services.
As a consequence, the person skilled in the art starting from D1 and trying to solve the aforementioned problem would use the location and identity information described in document D2.
- 1.8 Due to the reasons given in paragraphs 1.3-1.7 of the present report, the subject-matter of claim 1 cannot be considered as involving an inventive step (Article 33(3) PCT).

2. INDEPENDENT CLAIM 13

The same objection and reasoning applies to the independent method claim 15, since D1 also discloses the method steps to be performed by the means defined in D1, see page 10, line 6 to page 11, line 16, stages 1-8.

3. DEPENDENT CLAIMS 2-12, 14-16

Dependent claims 2-12, 14-16 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step. The reasons are as follows:

- 3.1 The additional features of claims 2, 4, 6-7 and 14-15 are known from D1 and therefore not new, see the following passages:
claim 2 (page 11, lines 4-5, "the external IP now preferably gives the caller a message [...] and goes on to receive data from the connection");
claim 4 (compare the connections among "SSP", "IP, VRP" and "SCP" in D1, Fig. 1 to the claimed ones among "first switch", "intelligent peripheral" and "network

apparatus");

claim 6 (page 10, line 30 to page 11, line 5, "the SCP commands the SSP to route the call to the automatic operator. If the call requires the automatic operator service, the call is routed to the IP");

claims 7 and 14 (page 11, lines 13-16, "stage 8" and also page 15, lines 31-33, "the SCP [...] requests the SSP to connect the call to the given destination number");

claim 15 (page 15, lines 24-30 and page 10, lines 1-2, "the program in the IP device", "the voice recognition program");

3.2 The additional features of claims 3, 5, 8-12 and 16 are not inventive because of the following reasons:

claim 3: In D1, page 11, lines 1-16, a logical connection between the intelligent peripheral ("IP") and the network apparatus ("SCP") is disclosed. Those skilled in the art know that a physical connection instead of a logical one would be also possible;

claim 5: the fact of connecting the intelligent peripheral and the network apparatus to different switches is just a slight constructional change of the system disclosed in D1, see Fig. 1, wherein a common switch is disclosed;

claims 8 and 10: those services and back-up strategies are well-known and supported in systems provided with automatic operators and speech recognition;

claim 9: the fact that the retrieved destination address is temporary does not add anything inventive over the disclosure of D1;

the additional features of claims 11 and 12 are constructional details of the network apparatus which do not add anything inventive over the disclosure of D1;

claim 16: it is obvious that a computer program can be provided in a data carrier.

Additional remarks

4. In claim 1, the difference between "VPN-numbers" and "VPN-addresses" is not clear. The wording of claim 7 is not concise since it includes many features already defined in its independent claim 1, rendering claim 7 unclear. The same objection applies to claim 14 w.r.t claim 13. Additionally, the category of claim 14 is not clear, since a method claim cannot be dependent on an apparatus claim.

EPO - DG 1
22. 11. 2004

(110)

Claims

1. Intelligent peripheral for speech recognition provided with a processor (55) and a memory (57) connected to the processor (55) and storing a list of VPN-addresses of at least one of a set of persons, personal functions, specific terminals and services as well as instructions to control said processor, wherein said VPN addresses include at least one of the following sets: fixed telephone addresses, mobile telephone addresses, e-mail addresses, facsimile addresses, the processor (55) being arranged to:
- communicate with a network apparatus (1, 7; 51) arranged to control a switch (49) in a telecommunication network;
 - communicate with said switch (49);
 - perform the following operations controlled by said instructions:
 - to receive a call from said switch (49), to establish a communication channel with said switch (49) and to receive a demand to be able to receive a speech instruction;
 - to receive from a first telecommunication apparatus said speech instruction associated with a VPN-number associated with either a desired person, personal function, second telecommunication apparatus or service desired to be called or noticed by said first telecommunication apparatus;
 - to recognize an additional spoken instruction indicating in which set the VPN-address is stored;
 - to translate said speech instruction into a VPN address associated with either a desired person, personal function, second telecommunication apparatus or service and send said VPN address to said network apparatus (1, 7; 51), the VPN-address having a predetermined format in accordance with a protocol used in the telecommunication network in which the intelligent peripheral is to be operated;
 - to transfer at least the VPN-address, as well as the identity and current location of the first telecommunication apparatus to said switch (49) in order to be transferred by said switch (49) to said network apparatus (1, 7; 51) as a standard IN request;
 - to release said communication channel with said switch (49).

2. Intelligent peripheral according to claim 1, wherein said processor is arranged to notify said first telecommunication apparatus with a welcome message that the intelligent peripheral is ready and waiting for said speech instruction.
3. Telecommunication network comprising an intelligent peripheral according to 10
5 any of the preceding claims, a first switch (49) connected to said intelligent peripheral (43,53), and a network apparatus (1,7; 51) connected both to said first switch (49) and to said intelligent peripheral, said network apparatus (1, 7; 51) being arranged to control said first switch (49).
4. Telecommunication network comprising an intelligent peripheral according to
10 any of the claims 1-2, a first switch (49) connected to said intelligent peripheral (43, 53), and a network apparatus (1,7; 51) connected to said first switch (49), said network apparatus (1,7; 51) being arranged to control said first switch (49).
5. Telecommunication network comprising an intelligent peripheral according to
15 any of the claims 1-2, a first switch (49) connected to said intelligent peripheral (43, 53), and a network apparatus (1, 7; 51) connected to a second switch (49), said network apparatus (1,7; 51) being arranged to control said second switch (49).
6. Telecommunication network according to any of the claims 3-5, wherein said network apparatus is arranged to control said intelligent peripheral.
- 20 7. Telecommunication network according to any of the claims 3-6, arranged to support the following operations:
- by said intelligent peripheral (43; 53):
 - to receive a call from said first switch (49), establish a communication channel with said first switch (49) and to receive a demand to be able to receive a
25 speech instruction;
 - to receive from a first telecommunication apparatus said speech instruction associated VPN-number associated with either a desired person, personal function, second telecommunication apparatus or service desired to be called or noticed by said first telecommunication apparatus;

- to translate said speech instruction into a VPN address associated with either a desired person, personal function, second telecommunication apparatus or service and send said VPN address to said network apparatus (1, 7; 51), the VPN-address having a predetermined format in accordance with a protocol used in the telecommunication network in which the intelligent peripheral is to be operated;
 - to transfer at least the VPN-address, as well as the identity and current location of the first telecommunication apparatus to said first switch (49);
 - to release said communication channel with said switch (49);
- 10 • by said network apparatus (1, 7; 51), to receive from said first switch (49) a standard IN request based on said VPN-address to establish a current address of said desired person, personal function, specific terminal or service and to send it to said first switch (49) to establish said connection between said first and second telecommunication apparatuses.
- 15 8. Telecommunication network according to any of the claims 3-7, arranged to support at least one of a UPT -service, a 3G-service, Freephone, Premium rate, Credit Call, Credit Card call, Televoting.
9. Telecommunication network according to any of the claims -8, wherein the network apparatus (1, 7; 51) is arranged to translate said VPN-address into another VPN-address where a user of said VPN-address can be reached temporarily.
- 20 10. Telecommunication network according to any of the claims 3-9, wherein the network apparatus (1, 7; 51) is arranged to provide at least one of the following fallback options if the intelligent peripheral (43; 53) fails to provide said VPN-address:
- requesting a user of said first telecommunication apparatus to provide said VPN-address;
 - requesting a user of said first telecommunication apparatus to provide said spoken name again by either DTMF codes or by using a keyboard.
- 25 11. Telecommunication network according to any of the claims 3-10, wherein the network apparatus comprises a service capability server (7) arranged to control the first

switch (49), and at least one application server (1) connected to said service capability server (7), the intelligent peripheral (43) being also connected to said service capability server (7) and said application server (1).

12. Telecommunication network according to any of the claims 3-10, wherein the network apparatus comprises a service control point (7) arranged to control the first switch (49), the intelligent peripheral (43) being also connected to said service control point (51).

13. Method to provide speech recognition by an intelligent peripheral provided with a processor (55) and a memory (57) connected to the processor (55) and storing a list of VPN-addresses of at least one of a set of persons, personal functions, specific terminals and services as well as instructions to control said processor, wherein said VPN addresses include at least one of the following sets: fixed telephone addresses, mobile telephone addresses, e-mail addresses, facsimile addresses, the processor (55) being arranged to:

- 15 • communicate with a network apparatus (1, 7; 51) arranged to control a switch (49) in a telecommunication network;
 - communicate with said switch (49);
- the method comprising the following operations controlled by said intelligent peripheral:
- 20 • to receive a call from said switch (49), to establish a communication channel with said switch (49) and to receive a demand to be able to receive a speech instruction;
 - to receive from a first telecommunication apparatus said speech instruction associated with VPN-number associated with either a desired person, personal function, second telecommunication apparatus or service desired to be called or
 - 25 noticed by said first telecommunication apparatus;
 - to recognize an additional spoken instruction indicating in which set the VPN-address is stored;
 - to translate said speech instruction into a VPN address associated with either a
 - 30 and send said VPN address to said network apparatus (1, 7; 51), the VPN-address

having a predetermined format in accordance with a protocol used in the telecommunication network in which the intelligent peripheral is to be operated;

- to transfer at least the VPN-address, as well as the identity and current location of the first telecommunication apparatus to said switch (49) in order to be transferred by said switch (49) to said network apparatus (1, 7; 51) as a standard IN request;
- to release said communication channel with said switch (49).

14. Method to be performed by a telecommunication network according to any of the claims 3-12, including the following operations:

- by said intelligent peripheral (43; 53):
 - to receive a call from said first switch (49), establish a communication channel with said first switch (49) and to receive a demand to be able to receive a speech instruction;
 - to receive from a first telecommunication apparatus said speech instruction 15 associated with VPN-number associated with either a desired person, personal function, second telecommunication apparatus or service desired to be called or noticed by said first telecommunication apparatus;
 - to translate said speech instruction into a VPN address associated with either a desired person, personal function, second telecommunication apparatus or service and send said VPN address to said network apparatus (1, 7; 51), the VPN-address having a predetermined format in accordance with a protocol used in the telecommunication network in which the intelligent peripheral is to be operated;
 - to transfer at least the VPN-address, as well as the identity and current location of the first telecommunication apparatus to said first switch (49);
 - to release said communication channel with said switch (49);
- by said network apparatus (1, 7; 51), to receive from said first switch (49) a standard IN request based on said VPN-address to establish a current address of said desired person, personal function, second telecommunication apparatus or service and to send it to said first switch (49) to establish said connection between said first telecommunication apparatus and said desired person, personal function, second telecommunication apparatus or service.

15. Computer program product to be loaded by an intelligent peripheral and arranged to provide said intelligent peripheral with the capacity to perform the method of claim 13.

5 16. Data carrier provided with a computer program product according to claim 15.
